

**MAGNETIC RECORDING CHANNEL UTILIZING CONTROL
FIELDS FOR TIMING RECOVERY, EQUALIZATION,
AMPLITUDE AND AMPLITUDE ASYMMETRY**

ABSTRACT OF THE DISCLOSURE

Channel parameters for a magnetic readback channel are optimized by detecting a readback signal that is recorded on a magnetic medium. The readback signal contains a plurality of predetermined-length control fields. Each control field is arranged between two user data fields and contains at least one transition. At least one selected readback parameter, such as a frequency of a readback channel system clock, a gain of the readback channel, a equalization response of the readback signal, and/or an amplitude asymmetry of the readback channel, is optimized based on information contained in at least one control field.